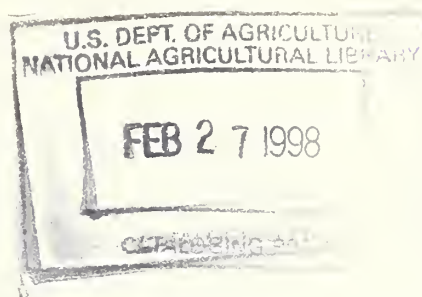


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THE WORLD FOOD DEFICIT

**A
FIRST
APPROXIMATION**

Foreign Agricultural Service - U.S. Dept. of Agriculture - March 1961

**United States
Department of
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E R R A T A

THE WORLD FOOD DEFICIT--a first approximation, issued March 1961

Change two figures in table at top of page 6, as follows:

Canada, other protein -- from 32 to 30

United States, animal protein -- from 65 to 66

Foreword

Many generalizations are made about the world's hunger but relatively little has been done to measure it. With programs going forward to help alleviate world hunger, it has become essential that actual food needs be calculated in terms as specific as possible. This study represents a preliminary effort to begin the job.

The greatest difficulty in measuring world food need is the frequent lack of data or the unreliability of data covering food production, food utilization, or food shortages. For many commodities, informed estimates have had to take the place of established data.

Despite the inherent weakness, however, this first "world food budget" should serve a useful purpose. The study has been prepared by specialists in the field of international food and agriculture. It offers rough guidelines for those in government and industry who require such guidelines in their work. It provides to citizens an overall picture of world food problems with which nations are trying to cope -- the United States, through its Food for Peace program; other nations, through their individual programs; and the United Nations, through specialized programs and agencies such as the Food and Agriculture Organization.

This First Approximation of World Food Deficits will be followed in the months ahead by a second report that will be more thorough, more refined, and more detailed in its calculations. Also, this second study will take fuller account of each country's special situation, including both food supply and problems of filling any food gap.

These world food surveys are being made under direction of a special Task Force whose members are: Robert C. Tetro, Foreign Agricultural Service, USDA, Chairman; Lawrence Witt, Office of Director of Food for Peace, White House; Sidney B. Jacques, Department of State; E. D. White, International Cooperation Administration; Harold A. Vogel, Food and Agriculture Organization of the United Nations; Philip M. Ritz, Conference on Economic Progress. Esther F. Phipard, Agricultural Research Service USDA, is serving as special consultant on nutritional problems. Wilhelm Anderson, Director, Foreign Agricultural Analysis Division, FAS, is supervising staff work and preparation of reports.

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THE WORLD FOOD DEFICIT

a first approximation

SUMMARY

If the world's food shortage were expressed in terms of the wide variety of foods people eat or would like to eat, the resulting data would be ponderously detailed. For the sake of greater simplicity and clarity, this study has taken the liberty of translating world shortages of widely varied foods into terms of a few widely known and widely used foods. These shortages represent the gap between actual amounts of food that people in deficit countries have available, whether domestically produced or imported, and the larger amounts of food desirable to maintain normal physical activity and health. In these terms, based on the year 1962, the estimated food shortages in the world's deficit countries may be said to be the equivalent of:

Animal protein, in terms of nonfat milk solids	1.8 million metric tons;
Pulse protein, in terms of dry beans and peas.	0.4 million metric tons;
Other protein, in terms of wheat	35.6 million metric tons;
Remaining calorie deficit, in terms of wheat	8.6 million metric tons.

Another way to express the deficit in countries short of food is in terms of United States agricultural production. In this highly simplified frame of reference, the estimated world food shortage for 1962 may be said to be roughly equivalent to 35 percent of U. S. annual milk production . . . plus 40 percent of U. S. annual dry bean and pea production . . . plus 120 percent of U. S. annual wheat production. This is not to imply that increased U. S. production can or should be the means of filling the world food gap. Other countries must help, too, and this process will evolve over many years. This comparison with U. S. production is intended only to be a convenient yardstick, helpful in visualizing the size of the deficit.

Interpretation of Data

In using the above data, these cautions should be observed:

(1) The world food deficit is very difficult to measure quantitatively, and these estimates are not to be regarded as precise measurements. They are first approximations, to be followed at a later date by data that are more refined and more detailed.

(2) It would not be accurate to conclude that the world automatically will eliminate its food deficit by producing the additional stated amounts of milk solids, dry beans and peas, and wheat. These equivalents are used to reduce the complicated food shortage picture to a few simple elements that are in sharp focus. As countries try to improve their diets, traditional food preferences will be a dominant guide and actual increases in production and imports will cover a wide range of foods.

(3) These world food deficit data do not carry with them any measure of actual ability of countries to fill their food shortages. By and large, food deficits are greatest in countries that have the least means of obtaining adequate supplies. While progress is being made, there is no assurance that the total food gap can be closed soon.

Less Developed Areas

This food deficit study covers the regions where people have the greatest need for additional protein and calories in their diets. In other countries, such as the United States, Canada, Australia, New Zealand, Soviet Union, and Eastern, Western, and Mediterranean Europe, national diets exceed minimum standards.

The study reveals that total calories, total proteins, and particularly animal proteins are on the whole very low for the populations of Western Asia, Africa, the Far East, Mainland China, and large parts of Latin America. These are the less developed areas of the world. The effect of shortages of calories and protein, especially animal protein, is to make their populations more vulnerable to certain deficiency diseases and to reduce the vitality and energy that undergirds national development.

Food shortages were measured in this study by applying nutritional reference standards. Calorie reference standards were based on those developed by the Food and Agriculture Organization, and range from a needed daily consumption of 2,300 calories per person in the Far East to 2,500 calories in Latin America. The protein reference standard was set at 65 grams of total protein per person per day. Of this at least a tenth, or 7 grams, should be animal protein, and total animal and pulse protein should equal at least 17 grams.

Deficit by Regions

By applying these standards, the study notes these world shortages:

Animal protein deficit, in terms of nonfat milk solids. The most critical shortages are in the Far East, followed by Communist Asia and by Africa. Additional amounts needed in 1962 are: Far East, 900,000 metric tons; Communist Asia, 755,000 metric tons; Africa, 115,000 metric tons; Latin America, 10,000 metric tons; total, 1,780,000 metric tons. Somewhat larger needs are projected for 1965.

Pulse protein deficit, in terms of dry beans and peas. This is much smaller than the animal protein deficit. Nearly all the pulse protein deficit is located in Africa and the Far East, with only a small deficit in Western Asia. Additional needs for 1962 are: Africa, 215,000 metric tons; Far East, 145,000 metric tons; Western Asia, 19,000 metric tons; total, 379,000 metric tons. Again, somewhat larger needs are projected for 1965.

Other protein deficit, in terms of wheat. The Far East, which contains nearly half the Free World's population and is the world's primary food deficit area, particularly needs to add protein to diets to achieve the daily reference standard of 65 grams. Considerable deficits also appear for Africa and some of the Latin American republics. Additional protein needs for 1962, in terms of wheat, are: Far East, 27,900,000 metric tons; Latin America, 4,000,000 metric tons; Africa, 3,700,000 metric tons; Western Asia, 17,000 metric tons; total 35,617,000 metric tons. Slightly larger needs are projected for 1965.

Remaining calorie deficit, in terms of wheat. The figures reflect net additional supplies required to raise the calorie level of the diet to minimum standards. Additional needs for 1962 are: Communist Asia, 7,000,000 metric tons; Western Asia, 1,570,000 metric

tons; total, 8, 570, 000 metric tons. Here again, somewhat larger needs are projected for 1965.

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In applying these data, it should be noted that the very large tonnages of wheat reflected in the two preceding categories could not readily be moved into the deficit areas and distributed through existing port, inland transportation, and other facilities. Also, government policies and long-standing food habits are important factors. Insofar as the food shortage in deficit countries is filled from outside sources, it will involve use of foods that meet desires of the people, improvement of distribution facilities where needed, and use of special measures to compensate for low purchasing power.

METHODOLOGY AND FINDINGS

Statistical Bases for the Calculations

The statistical bases for the calculations of the world food deficit are the food balance estimates prepared by the Foreign Agricultural Service and recently published for some 80 Free World countries and similar estimates published earlier or now under study for the countries of the Communist Bloc. These estimates summarize in statistical form the food supply situation of a country or an area by commodity or groups of commodities for the consumption year 1958¹. In accordance with accepted procedures, they show domestic production, plus imports, minus exports, plus or minus changes in stocks, and the total supply available for all uses. From this total supply by commodity or group of commodities are deducted seed, feed, and industrial uses, and a further deduction is made for wastage and processing from the stage of production to the retail stage. This then leaves a total supply available for human consumption, which is then broken down on the basis of population numbers into kilograms available per year per capita, and into calories available per day per capita.

Incompleteness, unreliability, or lack of basic data are the major handicaps in drawing up food balances. Many countries, for example, report only part of their food production and few report stocks or utilization of supplies. To present a reasonably complete picture of food supplies, it has often been necessary, therefore, to fill in gaps with estimates based on fragmentary information from scattered sources. Consequently, the consumption level for individual foods and for all foods combined as indicated in the balances must be regarded as approximate rather than precise.

Nevertheless, these consumption level estimates are felt to point with a fair degree of accuracy to the countries now in deficit and to provide a reasonably good starting base for calculating the order of magnitude of the world food deficit.

Nutritional Reference Standards

In addition to these statistical bases, this rough first approximation of the world food deficit required reference standards for total calories and protein per person per day for countries and regions against which consumption could be measured to determine deficits. The calorie reference standards used are based on requirements as developed by the Food and Agriculture Organization of the United Nations for 36 countries and published in the FAO Second World Survey, 1952. These requirements represent physiological needs for normal health and activity, taking account of environmental temperature, body weights, and the distribution by age and sex of the national populations. Calorie requirements by country were weighted to provide average reference standards by regions. The standards, given below, reflect regional variations in climates, body sizes, and proportion of adults and children but as derived they are at best only rough guides and obviously made no allowance for inequities in distribution of food among population groups.

Calories

Latin America.	2,500	(based on 9 countries)
Mediterranean Europe	2,430	(based on Italy and Greece)
Other Western Europe	2,635	(based on 8 countries)
Soviet Union.	2,710	
Other Eastern Europe	2,635	(average for Other Western Europe)
Western Asia	2,400	(requirement for Turkey)

¹ Consumption year for Western Europe is 1957-58 and for the USSR, most of Other Eastern Europe, Australia, and New Zealand, 1958-59.

Calories

Africa	2,375	(based on 6 countries)
Far East	2,300	(based on 5 countries)
Mainland China	2,300	(average for Far East)
Australia	2,640	
New Zealand	2,670	
Canada	2,710	
United States	2,640	(USDA calculates 2,720 on basis of 1955 population and 1958 NRC allowances)

Each of these calorie level requirements includes a 15-percent allowance above physiological needs, representing loss between the retail level and consumption in the home. They can thus be compared with the calculations of consumption as shown in the food balances, where account has already been taken of loss from the stage of production to the retail stage.

Next to calories, protein in the diet is the most basic nutritional need. Total protein is not likely to be low in diets when calorie needs are met. However, the source as well as the total amount of protein is important. If animal foods supply part of the total, the protein quality of the diet is enhanced. Proteins from pulses or legumes are also effective in supplementing those in grains and are especially important where animal protein is low.

Reference standards were therefore provided for animal and pulse protein as well as total protein, and the same standards were applied to all countries and regions of the world. They include an allowance of 65 grams of total protein, retail level; a tenth of the total, or 7 grams, for animal protein; and enough pulse protein to bring the total animal and pulse protein to 17 grams.

The total protein reference standard is generous to take account of the predominance of vegetable proteins in the diet of many countries. The animal protein reference standard, on the other hand, is exceptionally low and should not be regarded as a standard in the sense of representing animal protein adequacy of diets generally in the world. But the protein reference standards here applied serve to single out those areas where total protein availabilities are low and animal protein availabilities are especially low, and where therefore conditions are generally unfavorable for the survival of infants and children under 5 and for the health of pregnant and lactating women. Animal protein levels exceeding 7 grams per person per day would be desirable in these areas not only for protein quality itself but because foods which supply it -- milk, cheese, eggs, meat, fish -- provide other essential nutrients in which the diets are likely to be low.

Since nutritional science has not established a minimum physiological requirement for fat, no reference standard for fat was proposed at this time. Hence, deficits for fat were not determined, although it is clear that supplementary amounts of fats and oils would be a desirable addition to the diets of many countries.

Consumption Levels

Using the food balance estimates, food consumption levels per person per day were calculated for this study. These are given in terms of calorie, protein, and fat content for the major regions of the world:

Regions	Countries	Calories	Protein				Fat
			Animal	Pulse	Other	Total	
	<u>Number</u>	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Canada ¹	1	3, 080	62	2	32	94	138
Latin America..	20	2, 640	23	9	34	66	60
Mediterranean							
Europe	4	2, 660	25	6	44	75	74
Other Western							
Europe	12	2, 920	41	3	35	79	106
Soviet Union....	1	2, 985	26	3	63	92	70
Other Eastern							
Europe	7	2, 925	28	3	47	78	83
Western Asia...	7	2, 365	15	5	55	75	39
Africa	² 21	2, 455	11	10	43	64	44
Far East	12	2, 100	8	12	36	56	32
Mainland China.	1	2, 200	6	15	44	65	32
Australia and							
New Zealand ..	2	3, 210	67	5	31	103	136
United States ³ ..	1	3, 220	65	5	26	97	149

¹ Official Canadian figures. FAO conversion factors, applied to other countries, yield approximately the same figures.

² Countries or territories as they existed in 1958.

³ Official U.S. figures. FAO conversion factors, applied to other countries, would yield slightly lower figures.

These calculations exclude the countries for which food balances have not been constructed. However, they cover approximately 96 percent of the world population.

They disclose that total calories and total protein, particularly animal protein, are on the whole very low for the populations of Western Asia, Africa, the Far East, and Mainland China. This is true also in general for the people of Central America and large parts of South America, even though the regional totals for Latin America do not disclose it. In these underdeveloped areas of the world, the figures reflect critical dietary deficiencies that tend to make these populations vulnerable to certain diseases, particularly those associated with deficiency of protein and of vitamins and minerals provided by the animal protein foods.

Deficits and Requirements

Comparison of the nutritional reference standards with the consumption levels disclosed in the FAS food balance estimates shows that national average per capita consumption in 1958 exceeded the standards in all countries of Eastern Europe, including the Soviet Union, and all countries of Western Europe, including the Mediterranean area, as well as in Canada, the United States, Australia, and New Zealand. Most countries in the underdeveloped regions, on the other hand, fell short of the reference standards, as is shown in tabular form in the regional sections. Counting only the shortfalls but weighting them by the total food-balance

population, including that in countries with no shortfall, daily average per capita regional deficits worked out as follows:

Region	Calories	Protein		
		Animal	Pulse	Other
	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Latin America	117	.05	0	4.2
Western Asia.	150	0	.1	.05
Africa.	43	.4	.5	3.6
Far East.	200	1.0	.1	8.1
Mainland China.	100	1.0	0	0

It should again be emphasized that measured as they are, these deficits do not take account of the vulnerable groups within countries. The problem of low-income consumers and those in unfavored locations is commented on in the regional sections, and will be treated more fully in the second approximation of the world food deficit.

For this first rough approximation, calculations of the additional annual per capita food requirements to meet the protein and calorie deficits were based on the regional deficits shown above. To facilitate these calculations, nonfat milk solids were selected as the source of animal protein, dry peas and beans as the source of pulse protein, wheat as the source of other protein, and wheat also as the source for any calories needed after protein requirements were covered (here called "remaining calorie deficit"). These deficits could, of course, be met by numerous substitutes for these three food items.

Additional per capita quantities needed in 1958 to meet the protein and calorie deficit in terms of nonfat milk solids, dry peas and beans, and wheat were as follows:

Region	Animal protein in terms of non- fat milk solids ¹	Pulse protein in terms of beans and peas	Other protein in terms of wheat	Remaining calorie deficit in terms of wheat
	<u>Kilos</u>	<u>Kilos</u>	<u>Kilos</u>	<u>Kilos</u>
Latin America	0.05	0	19.6	0
Western Asia.	0	.2	.2	18.8
Africa.4	.8	14.0	0
Far East.	1.0	.2	30.0	0
Mainland China.	1.0	0	0	9.0

1 One kilogram of nonfat milk solids (36-percent protein) per year supplies an average of 1 gram of protein per day.

Even against the very low animal protein standard, significant deficits in this important nutrient are reflected for the Far East, Mainland China, and Africa. The pulse protein deficiency is also significant for Africa. The other protein deficiency is very large for the Far East as well as for parts of Latin America, and is quite significant for Africa, reflecting large deficits in total protein. The remaining calorie deficit, after the protein deficit has been provided for, is also significant for Western Asia and for Mainland China.

While food production during the 1960's is expected to increase somewhat faster than population in all regions except Latin America, countries now deficit will probably not have increased output per capita by 1965. Imports required to maintain 1958 consumption levels

in food importing regions are therefore likely to be as large or larger in 1962 and 1965 than in 1958. Assuming that 1958 consumption levels are maintained in countries now deficit, the world food deficit has been projected as follows (rounded to nearest 5):

<u>Product</u>	<u>1958</u>	<u>1962</u>	<u>1965</u>
		<u>1,000 metric tons</u>	
Animal protein in terms of nonfat milk solids	1,647	1,780	1,890
Pulse protein in terms of beans and peas	352	380	400
Other protein in terms of wheat	32,815	35,615	38,020
Remaining calorie deficit in terms of wheat	7,850	8,570	9,080
Total wheat	40,665	44,185	47,100

In making these calculations, the population estimates used are for entire regions, except for Latin America, where 98 percent of the population is included. Allowance has thus been made for most countries and territories for which food balances have not been constructed. The population estimates that were used are as follows:

<u>Region</u>	<u>1958</u>	<u>1962</u>	<u>1965¹</u>
	<u>Millions</u>	<u>Millions</u>	<u>Millions</u>
Latin America ²	188	210	225
West Asia	75	84	90
Africa	245	263	277
Far East	820	890	950
Communist Asia	675	725	770

1 Based primarily on UN median projections, The Future Growth of World Population, United Nations Population Studies No. 28.

2 20 republics.

The world food deficit may be broken down between the Free World and Communist Asia as follows (projections rounded to nearest 5):

Region	Free World			Communist Asia		
	1958	1962	1965	1958	1962	1965
<u>1,000 metric tons</u>						
Animal protein in terms of nonfat milk solids	947	1,025	1,090	700	755	800
Pulse protein in terms of dry beans and peas	352	380	400	0	0	0
Other protein in terms of wheat	32,815	35,615	38,020	0	0	0
Remaining calorie deficit in terms of wheat	1,400	1,570	1,680	6,450	7,000	7,400
Total wheat	34,215	37,185	39,700	6,450	7,000	7,400

By Category and Region

The animal protein deficit in terms of nonfat milk solids was found as given below for the consumption year 1958 and as projected for the years 1962 and 1965. The figures represent net imports that would be required to raise the animal protein content of the 1958 diet to the minimum reference standard of 7 grams per capita per day. (These are in addition to imports needed to maintain the 1958 level.)

Region	1958	1962	1965
<u>1,000 metric tons</u>			
Latin America	9	10	11
Western Asia	0	0	0
Africa	108	115	120
Far East	830	900	960
Communist Asia	700	755	800
Total	1,647	1,780	1,891

For the Free World the critical area is the Far East. Also a considerable deficiency appears for certain of the populations of Africa. Communist Asia, too, has a large total deficit.

The pulse protein deficit in terms of dry beans and peas for the consumption year 1958 and as projected for 1962 and 1965 is on the whole much smaller than the animal protein deficit. A pulse protein deficit was calculated in this study only under the following

conditions: When the animal protein content of the diet had been raised to 7 grams and it plus the pulse protein content was still below 17 grams. As calculated, the pulse protein deficit is such as to require the following imports to raise consumption levels from the 1958 level to the minimum reference standard:

Region	1958	1962	1965
	<u>1,000 metric tons</u>		
Latin America	0	0	0
Western Asia	17	19	20
Africa	200	215	225
Far East	135	145	155
Communist Asia	0	0	0
Total	352	379	400

(These imports also are in addition to those needed to maintain 1958 consumption levels.) Nearly all the deficit in pulse protein is located in Africa and the Far East, with only a small deficit in Western Asia.

The other protein deficit, in terms of wheat, was found as given below for the consumption year 1958 and as projected for 1962 and 1965. The figures represent net imports that would be required to raise the protein content of the 1958 diet to a total of 65 grams, after bringing animal and pulse protein up to the 17-gram minimum. (These imports, too, are in addition to those needed to maintain 1958 levels.)

Region	1958	1962	1965
	<u>1,000 metric tons</u>		
Latin America	3,700	4,000	4,400
Western Asia	15	17	18
Africa	3,400	3,700	3,900
Far East	25,700	27,900	29,700
Communist Asia	0	0	0
Total	32,815	35,617	38,018

The deficit in other protein centers largely in the Far East, but very considerable deficits also appear for Africa and large parts of Latin America.

For the Free World areas, with the exception of rather modest amounts for Western Asia, wheat needed to correct the other protein deficit in the diets also satisfies the total calorie requirements of the nutritional standards. However, it should be obvious that the very large tonnages of wheat reflected in the other protein deficit could not readily be moved into the deficit areas and distributed through existing port, inland transportation, and other distribution facilities. Furthermore, the income of consumers in the affected areas is not expected to rise sufficiently over the years through 1965 to permit the consumers to pay for these additional quantities.

The remaining calorie deficit, after the protein deficit was met, in terms of wheat was found as given below for the consumption year 1958 and as projected for 1962 and 1965. The figures represent net imports required to raise the calorie level of the 1958 diet to the calorie level requirements set for this study. (Again, they are in addition to imports needed to maintain 1958 consumption levels.)

Region	1958	1962	1965
1, 000 metric tons			
Latin America	0	0	0
Western Asia	1, 400	1, 570	1, 680
Africa	0	0	0
Far East	0	0	0
Communist Asia	6, 450	7, 000	7, 400
Total	7, 850	8, 570	9, 080

Except for amounts calculated for Western Asia, the deficit centers in Communist Asia.

Addition of these indicated quantities of nonfat milk solids, peas and beans, and wheat to the diets in countries now in deficit would have raised average daily per capita consumption in the underdeveloped regions in 1958 to the following levels:

Regions	Calories	Protein				Fat
		Animal	Pulse	Other	Total	
	Number	Grams	Grams	Grams	Grams	Grams
Latin America	2, 790	23	9	38	70	60
Western Asia	2, 515	15	5	60	80	40
Africa	2, 575	11	11	47	69	44
Far East	2, 400	9	12	44	65	33
Communist Asia	2, 300	7	15	44	66	32

Excesses over the reference standards reflect not only above-standard consumption of the countries not in deficit but also above-standard calorie levels for the countries in deficit in Latin America, Africa, and the Far East that resulted from the use of wheat to cover the remaining protein deficit. A different mixture of food -- say more fish or pulses and less wheat -- could have been used to meet the reference standard for total protein and not exceed the calorie standard. And in fact the mixture would need to be varied, by regions and by areas within regions, if it were to conform to the food habits and preferences of the people. This will be taken into account in the more detailed second approximation of the world food deficit. Here, the possibilities for adding to animal protein availabilities by further developing the fishing industry will be considered, especially for the Far East, where a limited land base makes it difficult to expand livestock and dairy production, although much can be done to make present livestock more productive.

By Region and Country

Latin America. --Weighted average deficits for the 20 republics indicate a per capita energy deficiency of 117 calories from the minimum standard of 2, 500 used for the area. Due to large populations in Argentina, Brazil, Mexico, and other countries which exceed

Table 1. --Latin America: Population and food consumption levels per person per day, by country, in terms of calorie, protein, and fat content, 1958

Country	Population (midyear)	Calories	Protein				Fat
			Animal	Pulse	Other	Total	
	<u>Million</u>	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Above 2,500 calories: ¹							
Argentina	20.2	3,360	62	1	37	100	121
Uruguay	2.7	2,945	59	1	50	110	118
Cuba	6.5	2,870	28	9	31	68	69
Brazil	62.5	2,815	20	14	30	64	56
Mexico	32.3	2,725	18	10	41	69	59
Chile	7.3	2,610	27	6	38	71	61
Costa Rica . . .	1.1	2,555	23	8	28	59	61
Below 2,500 calories:							
Panama	1.0	2,370	19	6	32	57	51
Paraguay	1.7	2,335	35	7	28	70	60
Venezuela . . .	6.3	2,255	18	9	29	56	48
Colombia	13.6	2,225	14	3	34	51	43
Honduras	1.8	2,190	9	8	41	58	33
Guatemala . . .	3.5	2,175	9	9	37	55	38
Peru	10.2	2,040	13	6	33	52	34
Nicaragua	1.4	1,985	18	5	27	50	38
El Salvador . . .	2.4	1,975	12	13	32	57	38
Dom. Republic .	2.8	1,950	12	5	31	48	45
Ecuador	4.0	1,935	10	7	28	45	32
Bolivia	3.3	1,880	14	4	32	50	28
Haiti	3.4	1,875	4	13	25	42	22
Average, 20 countries		2,640	23	9	34	66	60

¹ FAO calculations of energy requirements for 9 Latin American countries, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retail level and consumption in the home, were weighted to obtain a reference standard of 2,500 calories applicable to each of the 20 Republics.

the standard, the average deficit falls considerably below those computed for deficit countries. These range from 130 calories per day for Panama to 625 calories for Haiti (table 2). Haiti was the only country with a deficiency in animal protein. Several countries obtained less than 10 grams of protein from pulses. However, animal products plus pulses provided sufficient protein to meet the combined standards of 17 grams. The principal protein deficiency is in other products, which ranges from a per capita of 8 grams per day for Panama to 20 grams for Haiti and Ecuador.

The data for a particular country represent average per capita consumption of food. However, if it is assumed that the people consuming more than the average amounts

continue at this level, to give the ones below the average an adequate diet would require even greater quantities than those shown in the estimates. Also, the average for a country covers up whole segments of the population that fall below the reference standard. In certain countries, for example, the average meets the standard, but it is known that large segments of the population are undernourished, both in total calories consumed and in the protein content of the food. In Brazil, for example, the whole northeast is well below the country average, as are many low-income people in the cities, particularly Rio de Janeiro. For the 20 Republics there may be as many as 30 million to 40 million people who would have some degree of undernourishment not accounted for in the averages as shown.

Table 2. --Latin America: Calorie and protein deficit in per capita daily average diet by country, 1958¹

Country	Calories	Protein		
		Animal	Pulses	Other
	Number	Grams	Grams	Grams
Argentina	0	0	0	0
Brazil	0	0	0	1
Chile	0	0	0	0
Costa Rica	0	0	0	6
Cuba	0	0	0	0
Mexico	0	0	0	0
Uruguay	0	0	0	0
Bolivia	620	0	0	15
Colombia	275	0	0	14
Dominican Republic . .	550	0	0	17
Ecuador	565	0	0	20
El Salvador	525	0	0	8
Guatemala	325	0	0	10
Haiti	625	2.7	0	20
Honduras	310	0	0	7
Nicaragua	515	0	0	15
Panama	130	0	0	8
Paraguay	165	0	0	0
Peru	460	0	0	13
Venezuela	245	0	0	9
Average 20 countries	117	0.05	0	4.2

¹ Deficit measured against reference standards of 2,500 calories and 65 grams of protein, of which protein from animal foods and pulses should be no less than 17 and that from animal foods alone no less than 7 grams.

Production per capita of wheat in Latin America will probably not increase in the next 5 years. Output of animal protein foods and pulses, on the other hand, is expected to exceed slightly the growth in population, so that net imports required to maintain 1958 consumption levels are not likely to increase. It is assumed, however, that Argentina will continue to send meat to Europe and, if a larger Latin American population in 1965 is to maintain the 1958 level of consumption, imports from outside the region would be needed to offset Argentina's exports. In practice, however, it is doubtful if other countries would maintain the 1958 consumption levels of animal protein; rather, they may let per capita intake fall somewhat.

Port, storage, and transportation facilities in most of the deficit countries would need to be expanded to handle any appreciable increase in commodities received. Projects for their construction could be planned to utilize food as part payment of wages. In the tropical areas, storage would need to be adapted to hot moist conditions, or the transportation system synchronized to supply commodities on a continuous basis. In many of the countries, distribution facilities are not adequate and would need to be increased and strengthened to handle larger quantities of commodities.

In many of the countries, deficiencies could be partly met by an intensified program to assist in increasing domestic output of food. Latin America is anxious to become self-sufficient in the basic foods and would welcome this approach.

West Europe. --Although average per capita food consumption in most Western European countries is somewhat below the United States level, especially in animal proteins, it is far above the nutritional reference standards used in this study. Even in the Mediterranean countries, these standards are met insofar as the average diet is concerned (table 3), though the animal protein level is much below that of the rest of Western Europe. In Portugal, with the lowest per capita consumption in Western Europe, average daily consumption is, however, so little above the reference standards that there can be no question but that a substantial part of the population has a diet which does not meet them. Though average consumption is considerably higher in Spain and Greece, the margin above the standards is also slim, indicating that there, too, many people have below-standard diets. Italy ranks well above the rest of Mediterranean Europe, but well below the rest of the West European area. However, there is a sharp difference in levels of living between Northern Italy, which is in many ways like other areas of Western Europe, and southern Italy, including Sicily and Sardinia, which is one of Europe's least developed areas and has a low level of consumption, probably considerably below the accepted reference standard for a substantial part of the population.

Outside of the Mediterranean area, West European populations are, on the whole, well fed. The shortages of the immediate postwar period are long past, and in most countries average consumption is more than adequate in quality, as well as in quantity, though even here, of course, some segments of the population cannot afford adequate diets, in particular animal protein. In all West European countries, including the Mediterranean area, there has been a pronounced trend toward improved quality, particularly in increasing consumption of animal protein.

Food production per capita in Western Europe is expected to increase during the 1960's. Consumption will probably also increase though not as fast as production. Nevertheless, Western Europe will remain as now the great commercial outlet for exportable surpluses of food and feed from other regions of the world.

Eastern Europe. --In the countries of Eastern Europe, except Yugoslavia and Poland, the once-predominant small peasant agriculture has been either completely collectivized or

Table 3.--Western Europe: Population and food consumption levels per person per day, by country, in terms of calorie, protein, and fat content, 1957-58

Country or region	Population (end 1957)	Calories ¹	Protein ²				Fat
			Animal	Pulse	Other	Total	
<u>Mediterranean Europe:</u>							
	<u>Million</u>	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Italy	48.6	2,755	27	5	46	78	73
Greece	8.5	2,600	22	6	47	75	73
Spain	28.7	2,565	23	7	42	72	79
Portugal	8.2	2,485	20	5	40	65	72
Average, 4 countries . .		2,660	25	6	44	75	74
<u>Other Western Europe:</u>							
Ireland	2.9	3,375	46	1	42	89	112
Denmark	4.5	3,255	55	1	32	88	139
United Kingdom	51.5	3,200	56	2	27	85	128
Norway	3.5	3,180	43	1	33	77	131
Finland	4.4	3,110	46	1	37	84	115
Switzerland	5.2	3,040	50	1	31	82	110
France	45.2	3,015	48	2	37	87	108
Austria	7.0	3,010	41	1	33	75	109
West Germany	53.0	2,935	42	1	31	74	124
Sweden	7.4	2,935	50	1	26	77	124
Netherlands	11.1	2,895	43	1	28	72	119
Belgium	9.0	2,890	42	1	33	76	112
Average, 12 countries		3,040	48	1	32	81	120
Western Europe, average							
16 countries		2,920	41	3	35	79	106

¹ FAO calculations of energy requirements for two Mediterranean countries and eight north-west European countries, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retail level and consumption in the home, were weighted to obtain a reference standard of 2,430 calories applicable to each Mediterranean European country, and 2,635 calories applicable to each of the other West European countries.

² Reference standard for protein was set at 65 grams, of which protein from animal foods and pulses should be no less than 17 and that from animal foods alone no less than 7 grams.

far advanced toward this Communist goal. Before World War II, Eastern Europe was an important agricultural export region, especially of bread and feed grains. Agricultural exports have declined considerably since World War II as a result of collectivization, growth of population, and increasing industrialization, which was given high priority in the economic policies and programs of the Communist regimes. Although the region has been exporting grains and meat on a smaller scale in recent years, it has become a net importer of fats and oils.

Average per capita food supplies of the East European countries exceed the reference standards (table 4), though segments of the population have nutritionally inadequate diets. Faulty distribution of the food supply often contributes to nutritional deficits in certain areas, which may reappear, particularly in poor harvest years.

It should be borne in mind that 1958, the base year in this study, was characterized by poor crops in the Satellite countries. But this was offset to a large extent by excellent crops in the Soviet Union and increased grain exports to the Satellites. Small net imports of grains by the region as a whole and larger than usual imports of fats and oils in 1958 must be attributed to this abnormal situation.

Table 4. --Eastern Europe: Population and food consumption levels per person per day, in terms of Calories, protein, and fat content, by country, 1958-59

Country	Population (end 1958)	Calories ¹	Protein ²				Fat
			Animal	Pulses	Other	Total	
	Million	Number	Grams	Grams	Grams	Grams	Grams
U. S. S. R.	208.8	2,985	26	3	63	92	70
Other Eastern Europe:							
Poland	29.0	3,100	35	1	43	79	97
Czechoslovakia ³	13.5	3,010	26	1	41	68	95
East Germany ⁴	17.3	2,950	35	1	36	72	112
Hungary ⁴	10.0	2,925	26	3	42	71	85
Rumania	18.3	2,790	18	3	51	72	57
Bulgaria	7.8	2,780	20	6	63	89	61
Yugoslavia	18.3	2,770	24	5	59	88	60
Average, 7 countries		2,925	28	3	47	78	83

¹ FAO calculations of energy requirements, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retail level and consumption in the home, show 2,710 calories for the Soviet Union. In the absence of similar calculations for the rest of Eastern Europe, the rest of Eastern Europe, the reference standard of 2,635 calories, retail level, for energy requirements applied to most West European countries was also applied to East European countries other than the USSR.

² Reference standard for protein was set at 65 grams, of which protein from animal foods and pulses should be no less than 17 and that from animal foods alone no less than 7 grams.

³ 1956-57.
1957-58.

Projections for 1962 and 1965 assume the continuation of a recent trend of moderate increases in per capita consumption of animal protein foods. Conversely, bread grain consumption, which has been high, is likely to decrease or, at best, remain at the 1958 level. However, the change in the pattern of bread grain consumption from rye and corn to wheat, which has been evident in recent years, is considered as likely to continue. Also assumed is an increase in agricultural production that keeps pace with population growth, along with a moderate increase in per capita food consumption and the necessity to maintain substantial stocks.

A continuation of small exports of grains and animal products and decreased imports of fats and oils are envisaged. It should be borne in mind, however, that exports and imports, which are completely monopolized by the governments, are determined in Eastern Europe not only by commercial considerations but also by broader politico-economic objectives of the Communist regimes. Unpredictable deviations from the pattern indicated by this analysis, therefore, are possible.

Western Asia—An average per capita consumption providing less than 2,400 calories per day marks West Asia as a food deficit area. Only for Israel and Turkey among the 7 West Asian countries for which food balance information is available was the per capita consumption in 1958 above the regional reference standard of 2,400 calories per day. For the other countries, particularly Iran and Jordan, the food supply must be increased over the 1958 level if it is to provide the standard 2,400 calories (tables 5 and 6).

When the food consumption levels of each of the Western Asia countries are examined on the further basis of various proteins, it is found that only Jordan is below the standard of 65 grams of total protein per capita per day. None of the countries is below the reference standard of 7 grams of animal protein per day, and only one country, Syria, is below the standard of 17 grams of combined animal and pulse protein. This is a reflection of the pastoral economy of much of West Asia. And under these conditions, consumption of animal products, particularly of milk products, is considerable.

In order to correct the nutritional deficiencies of the national average diets of the area as they appeared in 1958, it would have been necessary for the area to import considerable quantities of wheat and to reduce exports of pulses. Since the area is a net exporter of pulses, the deficit in pulse protein could have been met from within the area. In 1958, the area's net export of pulses was about 70,000 metric tons.

West Asia produces substantial quantities of grain, and these will probably increase. But it is likely that the increase will be at a rate a little lower than the rate of population growth. It is also likely that output per capita of pulses and livestock products will show little if any increase.

It is anticipated that there would be no difficulty in finding ready acceptance of the increased quantities of wheat and pulses needed to close the nutritional gap. The physical problems of handling these quantities of foods in the area would be only routine.

Africa—In analyzing the food consumption pattern of Africa as a whole, it is revealed that the average consumption is above the African reference standard of 2,375 calories per person per day. However, when the data are examined on a regional basis, it is found that food supplies in six out of the seven countries north of the Sahara have a per capita energy value below the African standard. And so do three of the five countries in East and South Africa which were studied. On the other hand, not a single country of the extensive Central and West Africa area shows a calorie deficit in the diet. This is the area containing the

Table 5. — Western Asia: Population and food consumption levels per person per day, in terms of calorie, protein, and fat content, by country, 1958

Country	Population (mid-1958)	Calories	Protein				Fat
			Animal	Pulse	Other	Total	
Above 2,400 calories: ¹							
	<u>Millions</u>	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Israel	2.0	2,715	30	3	46	79	76
Turkey	26.2	2,650	12	6	66	84	32
Lebanon	1.5	2,415	14	3	55	72	28
Below 2,400 calories							
Iraq	6.5	2,255	20	7	52	79	53
Syria	4.2	2,225	11	4	50	65	26
Jordan	1.5	2,085	8	10	45	63	25
Iran	19.8	2,040	18	4	45	67	44
Average, 7 countries		2,365	15	5	55	75	39

¹FAO calculations of energy requirements for Turkey, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retain level and consumption, are 2,400 calories, a figure accepted as the reference standard applicable to each West Asian country.

Table 6—Western Asia: Calorie and protein deficit in per capita daily average diet, by country, 1958¹

Country	Calories	Protein		
		Animal	Pulse	Other
	<u>Number</u>	<u>Grams</u>	<u>Grams</u>	<u>Grams</u>
Above 2,400 calories:				
Israel	0	0	0	0
Turkey	0	0	0	0
Lebanon	0	0	0	0
Below 2,400 calories:				
Iraq	145	0	0	0
Syria	175	0	2	0
Jordan	315	0	0	2
Iran	360	0	0	0
Average, 7 countries	150	0	.14	.05

¹Deficit measured against a reference standard of 2,400 calories and 65 grams of protein of which protein from animal foods and pulses should be no less than 17 and that from animal foods alone no less than 7 grams.

tropical rain forests where the starchy root crop, cassava, forms an important part of the food supply (tables 7 and 8).

Table 7. —Africa: Population and food consumption levels per person per day, in terms of calorie, protein, and fat content, by country, 1958

Country	Population (mid-1958)	Calories	Protein				Fat
			Animal	Pulse	Other	Total	
Above 2, 375 calories: ¹	Millions	Number	Grams	Grams	Grams	Grams	Grams
Nigeria	36.6	2, 680	6	9	45	60	49
Belgian Congo & Ruanda-Urundi ² . .	18.3	2, 650	7	15	27	49	37
Togo	1.1	2, 645	4	10	34	48	65
Union of So. Africa.	14.4	2, 620	24	3	47	74	73
Ghana.	4.8	2, 605	9	5	37	51	52
French Eq. Africa ² .	5.0	2, 575	7	10	39	56	62
Liberia.	1.3	2, 540	3	3	36	42	55
Rhodesia & Nyasa- land, Fed	7.8	2, 500	12	13	51	76	46
Morocco	10.1	2, 480	17	1	54	72	30
Gameroun	3.2	2, 470	5	7	39	51	51
French West Africa ²	17.2	2, 450	5	8	46	59	27
Guinea	2.6	2, 400	4	10	33	47	60
Below 2, 375 calories:							
Egypt	25.0	2, 340	7	12	51	70	45
Ethiopia	18.4	2, 295	16	18	42	76	48
Sudan	10.9	2, 295	16	9	41	66	51
Kenya.	6.4	2, 240	13	6	45	64	37
Algeria.	10.6	2, 230	15	5	39	59	28
Angola	4.5	2, 215	8	17	31	56	44
Libya	1.2	2, 180	8	7	41	56	38
Tanganyika	8.9	2, 175	9	14	41	64	26
Tunisia.	4.1	2, 170	15	4	48	67	27
Average, 21 countries		2, 455	11	10	43	64	44

¹FAO calculations of energy requirements for six African countries, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retail level and consumption, were weighted to obtain a reference standard of 2, 375 calories applicable to all African countries.

²Names and frontiers as they existed in 1958. Data for constructing food balances for the new countries are not as yet available.

Table 8. —Africa: Calorie and protein deficit in per capita daily average diet, by country, 1958¹

Country	Calories	Protein		
		Animal	Pulse	Other

Northern Africa:

	Number	Grams	Grams	Grams
Algeria.	145	0	0	6
Egypt.	35	0	0	0
Ethiopia.	80	0	0	0
Libya.	195	0	2	7
Morocco.	0	0	0	0
Sudan.	80	0	0	0
Tunisia.	205	0	0	0

Central and West Africa:

Belgian Congo and Ruanda-Urundi ²	0	0	0	16
Cameroun.	0	2	3	9
French Equatorial Africa ²	0	0	0	9
French West Africa ²	0	2	2	2
Ghana.	0	0	3	11
Guinea.	0	3	0	15
Liberia.	0	4	7	12
Nigeria.	0	1	1	3
Togo.	0	3	0	14

East and South Africa:

Angola.	160	0	0	9
Kenya.	135	0	0	1
Rhodesia & Nyasaland, Fed.	0	0	0	0
Tanganyika.	200	0	0	1
Union of South Africa.	0	0	0	0
Average, 21 countries.	43	.44	.50	3.58

¹Deficit measured against reference standards of 2,375 calories and 65 grams of protein, of which protein from animal foods and pulses should be no less than 17 grams and that from animal foods alone no less than 7 grams.

²Names and frontiers as they existed in 1958. Data for constructing food balances for the new countries are not as yet available.

It is an interesting situation that the protein adequacy in the African diet is the exact opposite of the calorie adequacy. In Northern and in East and Southern Africa where grain production per capita is large and substantial livestock industries exist the deficit in protein, if any, is small. Several of the countries in these two areas are moderately deficient in

protein other than animal and pulse protein. However, in Central and West Africa, where grain production per capita is relatively small and livestock raising limited, protein deficits are the rule. Consumption of animal protein is below the reference standards in six of the nine countries studied in this area, and total protein consumption is short in every country.

These averages of course conceal the fact that segments of the population, even in countries with consumption well above the reference standards, have inadequate diets. Additional deficits may well appear, for example, when data become available for constructing food balances for the new African countries.

Africa was in 1958 a net exporter of 105,000 metric tons of pulses. If the nutritional need for pulse protein had been met, there would have been a net import of about 95,000 metric tons.

It is estimated that as in the past African agricultural production will increase at a faster rate than will the population during the 1960's. However, it is not anticipated that there will be a significant increase in wheat production or in output per capita of pulses or livestock products in the deficit countries by 1965.

Distribution to consumers of the quantities of commodities indicated in the deficits would be troublesome. A system of distribution to the interiors of the countries would have to be devised. Port capacity in West Africa is limited, and it is in this area that much of the increase in wheat availabilities would be needed.

There would be no problem of the African population's acceptance in its diet of nonfat dry milk and certain pulses. In many areas, fish is gaining in popularity. The African taste for wheat products is also growing. However, there could be some resistance to accepting the considerable quantities of wheat indicated (average of 14 kilograms per person). This would mean substituting wheat for part of the traditional locally grown cassava.

Far East. —The Far East, containing nearly half of the Free World population, is the world's primary food deficit area. Once a net exporter of grain, it has been a large net importer since the Second World War. Though food production has increased, output per capita is still slightly short of the prewar level. Food consumption per capita is low, averaging in terms of energy value about 5 to 10 percent below the reference standard of 2,300 calories for the region. Protein levels, particularly animal protein, are the lowest in the world. The weighted average consumption for the region in terms of energy value is 2,100 calories. Variation from this average ranges from 2,030 calories in Pakistan to 2,340 calories for Taiwan. Even in the countries at or above the standard there are groups of people whose food consumption is considerably below the standard for the region. No account is taken of these deficiencies in this study (table 9 and 10).

All countries in the region have initiated long-range development plans in the agricultural sector. Many of these multiyear plans are admittedly optimistic, as several factors hinder the attainment of the planned goals. Agricultural output in the region as a whole is expected to increase slightly more than population growth over the next 5 years. However, the countries which now have the largest deficits are not expected to improve production per capita, and any increase in per capita consumption would therefore have to come from imports.

Most of the countries of the Far East require large quantities of foreign aid to support their economic development programs and to supply much of the food and fiber imports.

Table 9. — Far East: Population and food consumption levels per day, in terms of calorie, protein, and fat content, by country, 1958

Country	Population (mid-1958)	Calories	Protein				Fat
			Animal	Pulse	Other	Total	
Above 2,300 Calories: ¹	Millions	Number	Grams	Grams	Grams	Grams	Grams
Taiwan	10	2,340	12	12	36	60	37
Japan	92	2,310	13	11	42	66	23
Below 2,300 Calories:							
Malaya	7	2,290	11	5	35	51	40
Thailand	22	2,185	12	4	29	45	35
Burma	20	2,150	10	7	34	51	26
Philippines	24	2,145	15	4	37	56	39
Indonesia	87	2,125	4	10	34	48	38
Ceylon	9	2,060	8	4	34	46	59
India	409	2,050	6	15	36	57	34
South Korea	23	2,040	11	10	39	60	19
Pakistan	86	2,030	10	8	36	54	20
Average, 12 countries		2,100	8	12	36	56	32

¹FAO calculations of energy requirements for five Far Eastern countries, estimated on the basis of physiological needs plus an allowance of 15 percent, representing waste between the retail level and consumption in the home, were weighted to obtain a reference standard of 2,300 calories, applicable to each of the Far Eastern countries.

Table 10. — Far East: Calorie and protein deficit¹ in per capita daily average diet, by country, 1958

Country	Calories	Protein		
		Animal	Pulse	Other
	Number	Grams	Grams	Grams
Taiwan	0	0	0	5
Japan	0	0	0	0
Malaya	10	0	1	13
Thailand	115	0	1	19
Burma	150	0	0	14
Philippines	155	0	0	9
Indonesia	175	3	0	14
Ceylon	240	0	5	14
India	250	1	0	7
Korea	260	0	0	5
Pakistan	270	0	0	11
Average, 12 countries	200	1.0	0.1	8.1

¹Deficit measured against reference standards of 2,300 calories and 65 grams of protein, of which protein from animal foods and pulses should be no less than 17 and that from animal foods alone no less than 7 grams.

During the next 5 years they may be in a better position to pay for the imports required to maintain the 1958 level of consumption; however, the increased imports needed to meet the reference standards for desirable broad nutritional improvements would have to be financed almost entirely by foreign aid.

The calorie and protein deficits for the Far East are of such magnitude and the populations involved are of such large sizes that the quantities of food required to meet the deficits existing today and projected for 1965 are great. In many of the receiving countries, port facilities are strained to handle the quantities of food arriving each year. Additional quantities of wheat amounting to more than three times the present imports of 8 million tons would require considerable investment to expand port and transportation facilities. Storage and milling equipment would also have to be expanded.

Although the deficits for animal proteins have been expressed in this study in terms of nonfat milk solids, they could be provided in the equivalent of other animal protein foods. Fish would be a good substitute, as this area now exports a half million tons net. In some areas, such as among the Hindu population of India, meat products could not be used to meet the protein need, but nonfat milk solids would be acceptable. Among the Moslem population, pork products could not be used to provide animal proteins. This is a traditional rice consuming area, but since World War II there has been substantial increase of wheat in the diet in urban areas. In some countries deficient in animal protein, pulses are an important source of protein. Beans and peas would be acceptable in most of these areas, and those with large Chinese or Japanese population could absorb additional quantities of soybeans.

Mainland China. --Per capita food consumption in Mainland China is below the reference standard for calories but normally somewhat above the average for the Far East. Heavy emphasis on industrial expansion at the expense of agriculture and organization of farmers into collectives and then communes have limited increases in food output and will probably continue to do so, at least in the next few years. Though total production may well show an upward trend, it is not expected to keep pace with the growth in population. This would call for a lowering of recent levels of food exports if 1958 consumption levels are to be maintained.

APPENDIX

Table 11. — World food deficit, by regions, 1958 and projections for 1962 and 1965¹

Region ²	Animal protein in terms of nonfat milk solids		Pulse protein in terms of beans and peas		Other protein in terms of wheat			Remaining calorie deficit in terms of wheat			
	1958	1962	1965	1958	1962	1965	1958	1962	1965		
	1, 000 metric tons										
Latin America	9	10	11	0	0	0	3, 700	4, 000	4, 400	0	0
Western Asia	0	0	0	17	19	20	15	17	18	1, 400	1, 680
Africa	108	115	120	200	215	225	3, 400	3, 700	3, 900	0	0
Far East	830	900	960	135	145	155	25, 700	27, 900	29, 700	0	0
Communist Asia	700	755	800	0	0	0	0	0	0	6, 450	7, 400
Total	1, 647	1, 780	1, 891	352	379	400	32, 815	35, 617	38, 018	7, 850	9, 080

¹ Imports needed to raise national average per capita consumption in deficit countries of the various regions to the reference standards for calories and protein. These are in addition to the imports needed to maintain 1958 consumption levels in 1958, 1962, and 1965 in countries above as well as below the reference standards in 1958.

² Reference standards exceeded in 1958 in all countries of Western Europe and Eastern Europe, including the Soviet Union, as well as in Canada, the United States, Australia, and New Zealand.